

# Routine Ambient Air Surveillance in the USCENTCOM AOR

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## Agenda

- Occupational and Environmental Health Surveillance
- Current Surveillance Efforts in CENTCOM by country
  - Operations Enduring and Iraqi Freedom
- The way ahead

## Background

- Occupational and Environmental Health Surveillance (OEHS)
  - US Military required to document OEH exposures to service members
  - Environmental samples collected to determine if exposures exist
  - Samples consist of soil, water, and air from locations where US deployed
  - Samples collected routinely by US Army, Navy, and Air Force PM personnel

## Ambient Air Surveillance

- Two most common types of air samples collected are particulate matter and VOCs
- VOCs due to presence of industry or US military operations with large volumes of fuel
- Particulate matter due to observed "dusty" conditions
  - Both ambient/naturally occurring or generation/resuspension from military operations

## Current Operations

- Historical
  - Particulate sampling in CENTCOM from Oil Well Fires to present
- Operation Enduring Freedom
  - ~November 2001 to present
- Operation Iraqi Freedom
  - ~March 2003 to present

## Operation Enduring Freedom

Country	Average PM <sub>10</sub> Concentration (µg/m <sup>3</sup> )	Maximum PM <sub>10</sub> Concentration (µg/m <sup>3</sup> )	Number of Samples
Djibouti	140	310	41
Afghanistan	350	3,210	130
Uzbekistan	110	790	96
Saudi Arabia	120	580	60
Kyrgyzstan	50	1,160	16

Military Exposure Guideline for PM<sub>10</sub>: 150 µg/m<sup>3</sup> 24 hour/50 µg/m<sup>3</sup> 1 year

## Operation Iraqi Freedom

Country	Average PM <sub>10</sub> Concentration (µg/m <sup>3</sup> )	Maximum PM <sub>10</sub> Concentration (µg/m <sup>3</sup> )	Number of Samples
Iraq	340	46,500	1088
Kuwait	320	13,400	875
Qatar	140	1,040	72

Country	Average PM <sub>2.5</sub> Concentration (µg/m <sup>3</sup> )	Maximum PM <sub>2.5</sub> Concentration (µg/m <sup>3</sup> )	Number of Samples
Iraq	70	290	66

Military Exposure Guideline for PM<sub>10</sub>: 150 µg/m<sup>3</sup> 24 hour/50 µg/m<sup>3</sup> 1 year

Military Exposure Guideline for PM<sub>2.5</sub>: 65 µg/m<sup>3</sup> 24 hour/15 µg/m<sup>3</sup> 1 year

## Way Ahead

- Routine surveillance indicates particulate matter exposure most significant exposure in USCENTCOM AOR
- PM needs to be better characterized
- Enhanced Surveillance intended to provide complete characterization of the PM